



## Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact [support@jstor.org](mailto:support@jstor.org).

# SCIENTIFIC BOOKS

## PASTEUR—THE HISTORY OF A MIND

By EMILE DUCLAUX. Translated by ERWIN F. SMITH and FLORENCE HEDGES, *Pathologists of the U. S. Department of Agriculture.*

This book is not only a critique of Pasteur. It is a contribution to biological history at a very important period in the development of science. 363 pages.

The W. B. Saunders Co., Philadelphia

## EDUCATIONAL SOCIOLOGY

By WILLIAM ESTABROOKE CHANCELLOR, *Head of the Department of Political and Social Sciences, College of Wooster.*

The purpose of this text-book is to make a general introductory survey of the field of sociology with special reference to education. 422 pages.

The Century Company, New York

## VERTEBRATE ZOOLOGY

By HORATIO HACKETT NEWMAN, *Professor of Zoology and Embryology in the University of Chicago.*

This book is intended for use as a text-book in college courses in vertebrate zoology such as are required of premedical students, and other students who have had a course in general zoology. 442 pages. Price \$3.00.

The Macmillan Company, New York

## PHYSIOGRAPHY. (Third Edition)

By ROLIN D. SALISBURY, *Head of the Department of Geology, in the University of Chicago.*

This volume is intended for students of normal school grade. The third edition has been revised throughout, and much of it has been rewritten. 675 pages.

The Henry Holt and Co.

## THE ORGANIZATION OF INDUSTRIAL AND SCIENTIFIC RESEARCH

By C. E. KENNETH MEES, *Director of the Research Laboratory, Eastman Kodak Company, Rochester, N. Y.*

This book is intended as a contribution to the study of the best methods of organizing research for industrial purposes and of the conditions under which such work should be conducted. 175 pages.

The McGraw Hill Book Co., New York

## HUMAN PSYCHOLOGY

By HOWARD C. WARREN, *Professor of Psychology, Princeton University.*

A text-book based on the theory that mental life comprises the events which occur in the active give-and-take relations between organisms and environment. 460 pages.

The Houghton Mifflin Company, Boston

## APPLIED ECONOMIC BOTANY

By MELVILLE THURSTON COOK, Ph.D., *Rutgers College, New Brunswick, N. J.*

The author has endeavored to make this work so flexible that it may be used in schools regardless of the amount of time devoted to the subject, or the available laboratory space and equipment. 261 pages.

J. B. Lippincott Company, Philadelphia

## THE NATURAL HISTORY OF SOUTH AFRICA

By F. W. FITZSIMONS, F.Z.S., F.R.M.S., &c., *Director, Port Elizabeth Museum.*

A popular and scientific series of books on the animals of South Africa. 4 volumes. \$6.00 per volume.

Longmans, Green & Company, London

## ELECTRIC OSCILLATIONS AND ELECTRIC WAVES

By GEORGE W. PIERCE, Ph.D., *Professor of Physics in Harvard University.*

This book is designed to present a mathematical treatment of some of the fundamentals of the theory of electric oscillations and electric waves. 417 pages.

McGraw Hill Book Company, New York City

## INBREEDING AND OUTBREEDING

By EDWARD M. EAST, Ph.D., *Harvard University*, and DONALD F. JONES, Sc.D., *Connecticut Agricultural Station.*

Designed especially for the biologist, this work should be read by those who are interested in the far-reaching and fundamental application of the laws of heredity and the experiments that have been done in this subject. 285 pages.

J. B. Lippincott Company, Philadelphia

## SOUTH

By ERNEST SHACKLETON.

A graphic account of Shackleton's last expedition (1914-1917). There are chapters in this book of high adventure, strenuous days, supreme loyalty and generous self-sacrifice. 374 pages. 88 illustrations and diagrams.

The Macmillan Company, New York

## THE UNITY OF THE ORGANISM

By WILLIAM EMERSON RITTER, *Director of the Scripps Institution for Biological Research of the University of California.*

This book marks a distinctive step in the advance of biology from the laboratory-speculative point of view to a broader natural history outlook. 2 volumes. Price \$5.00.

Richard G. Badger, Boston, Mass.

## MIND AND CONDUCT

By HENRY RUTGERS MARSHALL, L.H.D., D.S.

An inquiry into the problems of mind and conduct by the author of "Instinct and Reason," "Pain and Pleasure and Aesthetics," and other well known volumes in the field of Psychology. 236 pages. Price \$1.75.

Charles Scribner's Sons, New York

## OPTIC PROJECTION

By HENRY PHELPS GAGE, Ph.D. and SIMON HENRY GAGE, B.S.

Principles, installation and use of the magic lantern, opaque lantern projection microscope and moving picture machine. 700 pages, 400 illustrations. Price \$3.00.

The Comstock Publishing Company, Ithaca, N. Y.

Advertisements of new books of interest to readers of the MONTHLY will be inserted on this page for \$1.00

## Publications of Carnegie Institution of Washington

The publications of the Institution now number over 350 volumes, the subjects including Anatomy, Archaeology, Astronomy, Botany, Chemistry, Economics and Sociology, Embryology, Experimental Evolution and Heredity, Engineering, Folk-Lore, Geology, History, International Law, Literature, Mathematics, Medicine, Nutrition, Philology, Physics, Zoology. Classified and descriptive lists will be sent postpaid on application.

### Botany and Related Subjects *In Press*

248. BRITTON, N. L., and N. N. ROSE. The Cactaceae. Descriptions and Illustrations of Plants of the Cactus Family. Quarto in 4 vols. Volume I will appear in June or July, 1919. It will be illustrated by 301 text-figures and 36 plates; of the latter, 28 are in colors.
286. WEAVER, JOHN E. The Ecological Relation of Roots. Octavo.
287. SPOEHR, H. E. The Carbohydrate Economy of Cacti. Octavo.
289. DOUGLAS, A. E. Climatic Cycles and Tree-growth. Octavo.
290. CLEMENTS, FREDERIC E. Plant Indicators: The Relation of Plant Communities to Conditions and Practices. Octavo.
297. MACDOUGAL, D. T. Hydration and Growth. Octavo.

Orders for above publications may be made through book-sellers or sent directly to the Institution.

All communications should be addressed to

**CARNEGIE INSTITUTION OF WASHINGTON  
WASHINGTON, D. C.**

## Marine Biological Laboratory

Woods Hole, Mass.

### INVESTIGATION

Entire Year

Facilities for research in Zoology, Embryology, Physiology and Botany. Seventy-six private laboratories, \$100 each for not over three months. Thirty tables are available for beginners in research who desire to work under the direction of members of the staff. The fee for such a table is \$50.00.

### INSTRUCTION

June 30 to August 10

Courses of laboratory instruction with lectures are offered in Invertebrate Zoology, Protozoology, Embryology, Physiology and Morphology and Taxonomy of the Algae. Each course requires the full time of the student. Fee, \$50. A lecture course on the Philosophical Aspects of Biology and Allied Sciences is also offered.

### SUPPLY DEPARTMENT

Open the Entire Year

Animals and plants, preserved, living, and in embryonic stages. Preserved material of all types of animals and of Algae, Fungi, Liverworts and Mosses furnished for classwork, or for the museum. Living material furnished in season as ordered. Microscopic slides in Zoology, Botany, Histology, Bacteriology. Price lists of Zoological and Botanical material and Microscopic Slides sent on application. State which is desired. For price lists and all information regarding material, address

GEO. M. GRAY Curator, Woods Hole, Mass.

The annual announcement will be sent on application to The Director, Marine Biological Laboratory, Woods Hole, Mass.

# SCIENCE

**A WEEKLY JOURNAL DEVOTED TO THE ADVANCEMENT OF SCIENCE**

FRIDAY, JUNE 4, 1920

The Effect of the War on the Chief Factors of Population Change: Professor Raymond Pearl.  
Colored Photographs of Plant Disease Specimens: Drs. Max W. Gardner and George K. Link.  
William Dixon Weaver: William E. Keily.  
State Grants for Scientific Investigations in England.  
Scientific Events:—

The Manufacture of Synthetic Ammonia in England; Spanish Edition of the Journal of the American Medical Association; Grants for Research made by the American Association for the Advancement of Science.

Scientific Notes and News.  
University and Educational News.

Discussion and Correspondence:—  
Renewal of our Relations with the Scientific Men of Europe: Dr. Henry Fairfield Osborn. The Meteor of November 26, 1919: William Kelly. Formulae for Dates: Dr. W. J. Spillman. The Library of the Late Professor Zuntz: Professor Yandell Henderson.

Quotations:—  
Work of the Mayo Brothers.  
The Journal of Mammalogy: Professor Charles E. Johnson.  
Special Articles:—

Fluorescence, Dissociation and Ionization in Iodine Vapors: Drs. K. T. Compton and H. D. Smyth.  
The American Philosophical Society: Professor Arthur Goodspeed.

Annual Subscription \$5.00

FRIDAY, JUNE 11, 1920

The Future of the State Academy of Science: Professor Paul P. Boyd.

Preliminary Results of Analysis of Light Deflections observed during the Solar Eclipse of May 29: Dr. L. A. Bauer.

The Fourth Year of the Neotropical Research Station: Dr. Henry Fairfield Osborn.

Scientific Events: Collections of the National Museum: Appropriations from the Henry Draper Fund of the National Academy of Sciences; Association of Scientific Apparatus Makers of the United States of America; The Graduate School of Medicine of the University of Pennsylvania; Officers of the National Research Council.

Scientific Notes and News  
University and Educational News

Discussion and Correspondence:—  
Modern Interpretation of Differentials again: Professor Edward V. Huntington. Popular Scientific Literature: Joseph L. Wheeler. Rules of International Commission of Zoological Nomenclature: Dr. C. W. Stiles.

Special Articles: Echinoderms in Birds' Stomachs: Dr. Hubert Lyman Clark.

The American Philosophical Society: Professor Arthur W. Goodspeed.

Single Numbers 15 cents

Published every Friday by

**THE SCIENCE PRESS**

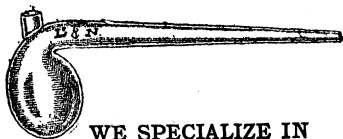
LANCASTER, PA.

GARRISON, NEW YORK.

Sub-Station 84: New York

## Are You About To Buy Chemical Apparatus?

Drop us a line before you buy and we'll try to show you what you may gain from buying from us.



**WE SPECIALIZE IN**  
 Graduated and Blown Glassware  
 Thermometers, Hydrometers  
 Coors and Guernsey Porcelain  
 Pyrex Glassware  
 All kinds Filter Paper, Hardware  
 Heavy Separatory Funnels and Kipps  
 Generators and Stains

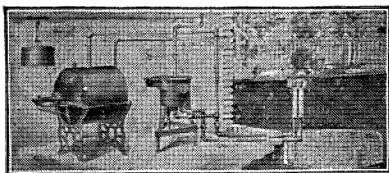
*Our 500-page catalogue sent upon request*

**LENZ APPARATUS CO.**

Manufacturers—Dealers—Importers

18 East Sixteenth Street  
 New York City, U. S. A.

## GAS—GAS



### The "Detroit" Combination Gas Machine

Automatically makes the best  
 and cheapest gas for

**Laboratory Uses of Every Character**

Heating—Cooking—Lighting  
 Over 30,000 in daily use

*Descriptive catalogue and names of users in your  
 locality sent on request*

**THE DETROIT HEATING &  
 LIGHTING CO.**

612 Wight St.

Detroit, Mich.

Established 1868

## Carnegie Pensions

By J. McKEEN CATTELL

Together with Extracts from Letters from Two Hundred and Fourteen College and University Professors, an Article on the History of the Carnegie Foundation by Joseph Jastrow, and the Reports of the Committee on Pensions and Insurance of the American Association of University Professors.

*Pages viii + 253. Price, \$1.50 Postpaid*

**THE SCIENCE PRESS**

GARRISON

NEW YORK

Any of the following recent publications of The Prudential Insurance Company of America will be sent free on request:

*Pauper Burials and the Interment of the Dead in Large Cities.*

*A Plan for a more Effective Federal and State Health Administration.*

*Failure of German Compulsory Health Insurance—A War Revelation.*

*A Plea and a Plan for the Eradication of Malaria Throughout the Western Hemisphere.*

*The Malaria Problem in Peace and War.*

*The Sanitary Progress and Vital Statistics of Hawaii.*

*Army Anthropometry and Medical Rejection Statistics.*

*Influenza—Chart.*



**The Prudential Insurance Company  
 OF AMERICA**

HOME OFFICE, NEWARK, N. J.

Forrest F. Dryden, President

*Incorporated Under the Laws of the State of New Jersey*

# SCIENCE PROGRESS

A QUARTERLY REVIEW OF SCIENTIFIC THOUGHT, WORK AND AFFAIRS

EDITED BY SIR RONALD ROSS, F.R.S., D.Sc., M.D., Etc.

SCIENCE PROGRESS owes its origin to an endeavor to found a scientific journal containing original papers and summaries of the present state of knowledge in all branches of science. The necessity for such a journal is to be found in the fact that, with the specialization which necessarily accompanies the modern development of scientific work and thought, it is increasingly difficult for even the professional man of science to keep in touch with the progress achieved and the trend of thought in subjects other than those in which his immediate interests lie. This difficulty is felt by teachers and students in schools and colleges, and by the general educated public interested in scientific questions. SCIENCE PROGRESS claims to have filled this want.

Published early in January, April, July, and October, by John Murray, 50a, Albemarle Street, London, W., England. Price of a single number is 6/- net. Annual subscription (including postage) 25/6.

## Important Recent Special Publications of the Philippine Bureau of Science

**SPECIES BLANCOANÆ:** A critical revision of the Philippine species of plants described by Blanco and by Llanos. By E. D. Merrill. 424 pages. Postpaid \$2.25.

**PHILIPPINE WATER SUPPLIES:** By G. W. Heise and A. S. Behrman. 218 pages and 19 plates. Postpaid \$1.75.

**AN INTERPRETATION OF RUMPHIUS'S HERBARIUM AMBOINENSE:** By E. D. Merrill. 596 pages and 2 maps. Postpaid \$3.00.

**The Philippine Journal of Science,** a monthly (no longer issued in sections), per year \$5.00.

A list of the publications of the Philippine Bureau of Science and a sample copy of the Philippine Journal of Science will be sent upon request.

Subscriptions and orders for publications should be sent to

## Philippine Journal of Science

Bureau of Science

Manila, P. I.

## The Microscope

12th Edition, Published April 10, 1917

Re-Written and largely Re-Illustrated

By SIMON HENRY GAGE of Cornell University

Postpaid \$3.00

COMSTOCK PUBLISHING CO., Ithaca, N. Y.

**Memoirs of the Wistar Institute of Anatomy and Biology.** No. 6, 1915

## THE RAT

Data and Reference Tables. 278 Pages. 89 Tables.

Bibliography.

Compiled and Edited by HENRY H. DONALDSON.

Postpaid, \$3.00.

The Wistar Institute

Philadelphia, Pa.

## ROMEIKE'S

## PRESS CLIPPINGS

are now an absolute necessity for every scientific man. By methodical searching through the most important papers and periodicals published in this country and abroad we are able to supply you at short notice with information on any subject which perhaps you would be unable to find yourself in libraries or reference books after spending days or even weeks at such a task. Write for further information.

**HENRY ROMEIKE, Inc.**

106-110 Seventh Avenue

New York City

# The Scientific Monthly

Entered as second-class matter October 1, 1915, at the post-office of Lancaster, Pennsylvania,  
under the Act of March 3, 1879

## CONTENTS OF THE MAY NUMBER

The Beginnings of Human History Read from the Geological Record—The Emergence of Man. Professor John C. Merriam.  
Occupational Therapy in Tuberculosis. Captain Frank A. Waugh.  
Academic Unrest and College Control. Professor J. J. Stevenson.  
Philosophy in the Service of Science. Professor A. H. Lloyd.  
The Problem of the History of Science in the College Curriculum. Professor Henry Crew.  
The Planetesimal Hypothesis in Relation to the Earth. Professor Reginald A. Daly.  
The Mechanism of Evolution. Professor Edwin Grant Conklin.  
State Parks in Iowa. Professor L. H. Pammel.  
The Progress of Science:—  
The Northumberland House of Joseph Priestley;  
The Work in Industrial Chemistry of the American Chemical Society; Meat and Milk in the Food Supply; Scientific Items.

## CONTENTS OF THE JUNE NUMBER

Recent California Earthquakes. Dr. Andrew H. Palmer.  
A Policy for the U. S. National Museum. Professor T. D. A. Cockerell.  
Gustaf Retzius, 1842-1919. Dr. Olof Larsell.  
The Physical Spencer. Dr. James Frederick Rogers.  
Present Economic and Social Problems. Dr. David Jayne Hill.  
The Rate of Evolution. Professor Edwin Grant Conklin.  
Population. Professor E. M. East.  
The Progress of Science:—  
Encephalitis lethargica; The Wireless Telephone; Scientific Publications in English for the Nations of Continental Europe; Scientific Items.  
Index to Volume X.

## SUBSCRIPTION ORDER

To THE SCIENCE PRESS,  
Publishers of THE SCIENTIFIC MONTHLY,  
Sub-Station 84, New York City.

Please find enclosed check or money order for five dollars, subscription to THE SCIENTIFIC MONTHLY for one year, beginning July, 1920.

Name\_\_\_\_\_

Address\_\_\_\_\_

Single Number 50 Cents

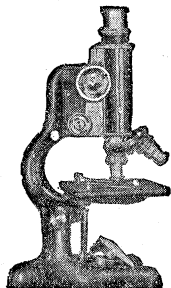
Yearly Subscription \$5.00

## THE SCIENCE PRESS

Lancaster, Pa.

Garrison, N. Y.

**"Look! It's Moving"**



Exclaims the child as with eye glued to the microscope he watches the movements of strange creatures in that world too small for human eye to see. He is learning—eagerly and intensely. He is putting every ounce of energy into the absorbing study. You look for results in your children. Get them. You pay for quality in your microscope. Demand it. Put the famous

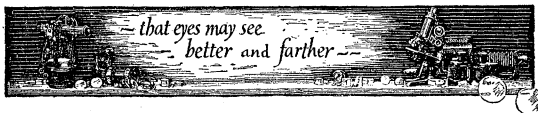
**BAUSCH & LOMB  
MICROSCOPE**

into your school. There is a Bausch & Lomb lens for every occasion where eyes must see better and farther. And the Bausch & Lomb Optical products have been the choice of the American people and their Government, in peace and in war, for nearly fifty years. Ask for our new catalog.

**BAUSCH & LOMB OPTICAL CO.**

New York      Washington      San Francisco  
Chicago      ROCHESTER, N. Y.      London

*Leading American Makers of Photographic Lenses, Microscopes, Projection Apparatus (Balopticons), and other High-Grade Optical Products.*

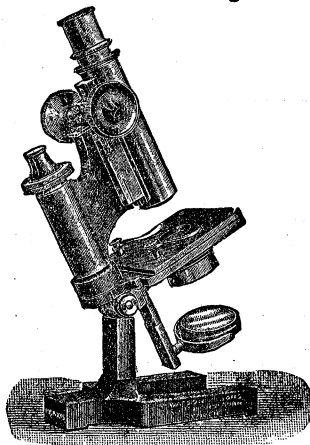


**W. Watson & Sons, Ltd**

BRITISH MADE

**STUDENTS MICROSCOPES**

The "Praxis" Stand is the Student's model par excellence. Made throughout with the same accuracy



and finish as Watson's highest priced Stands.

A few special points are:—Standardization so that additional movements may be fitted as required. Lever fine adjustment. Constructed of two solid castings and indestructible. All parts are slotted and sprung to compensate for wear.

Catalogue of Microscopes and Accessories for all purposes gratis on request from

**W. WATSON & SONS, Ltd.**

Established 1837

313, High Holborn, London, England

**Refracting and Reflecting  
Astronomical Telescopes**

**Standard and Portable**

**Visual and Photographic  
OBJECTIVES**

Computed by our associate

**Dr. F. R. MOULTON**

(Chicago University)

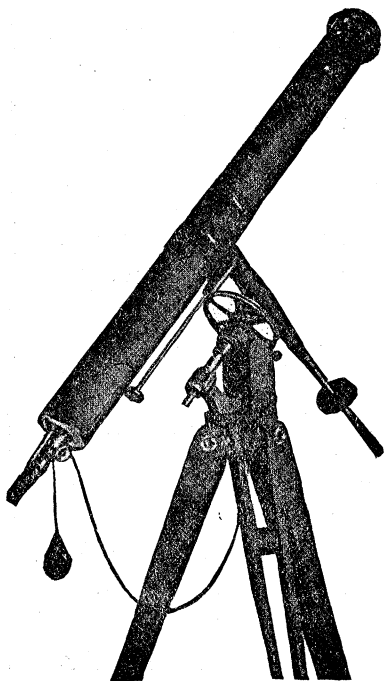
**OBSERVATORIES**

Specula, Planes, Eyepieces, etc.

Photographs and Circulars on request

**LOHMANN BROS.**

GREENVILLE, OHIO :: :: :: U. S. A.



*Illustration shows 5-in. with  
pneumatic clock*